

# Green Streets



## Oakland County

GLRI Green Streets Grant  
“Restoring the Erie Corridor  
through Green Streets”

- Background
- Project Design
- Things to Consider
- Pictures



# Background

Southeast Michigan  
*20 miles northwest of Detroit*

Consists of 910 square miles

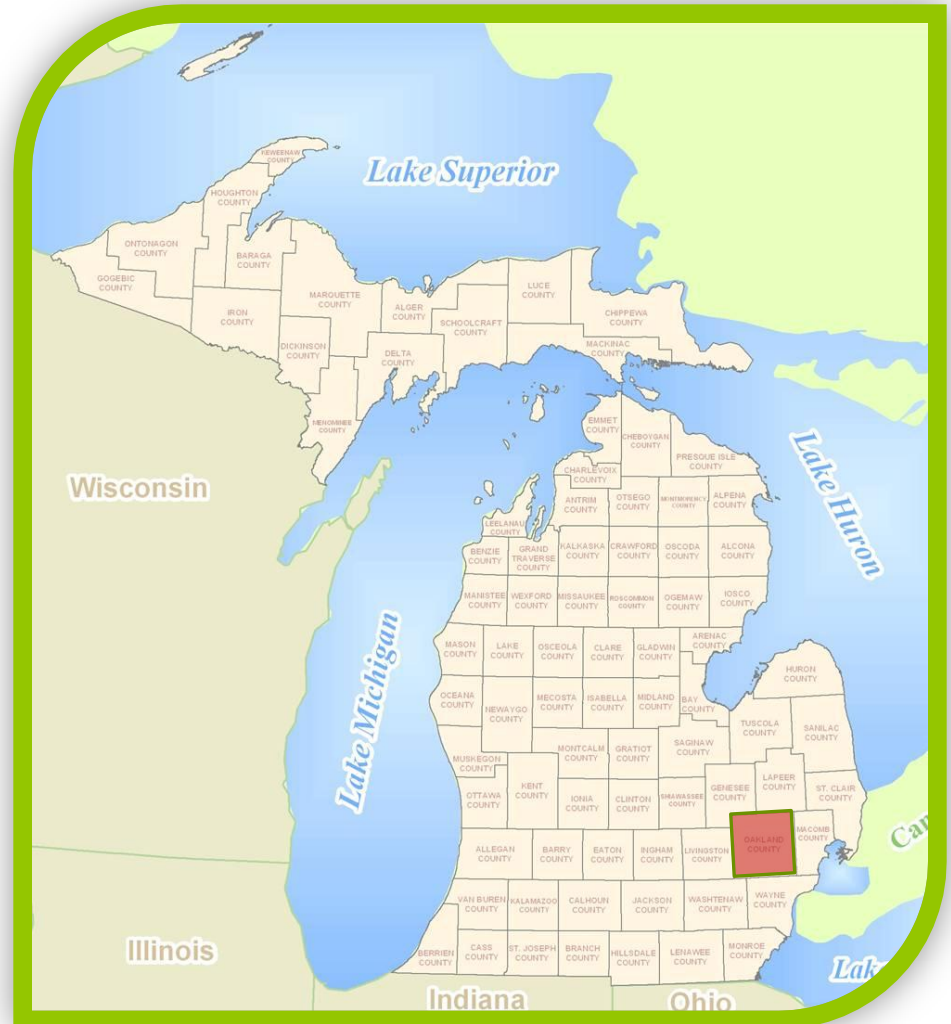
**Population of 1.2 million**

**More than 1,400 lakes**

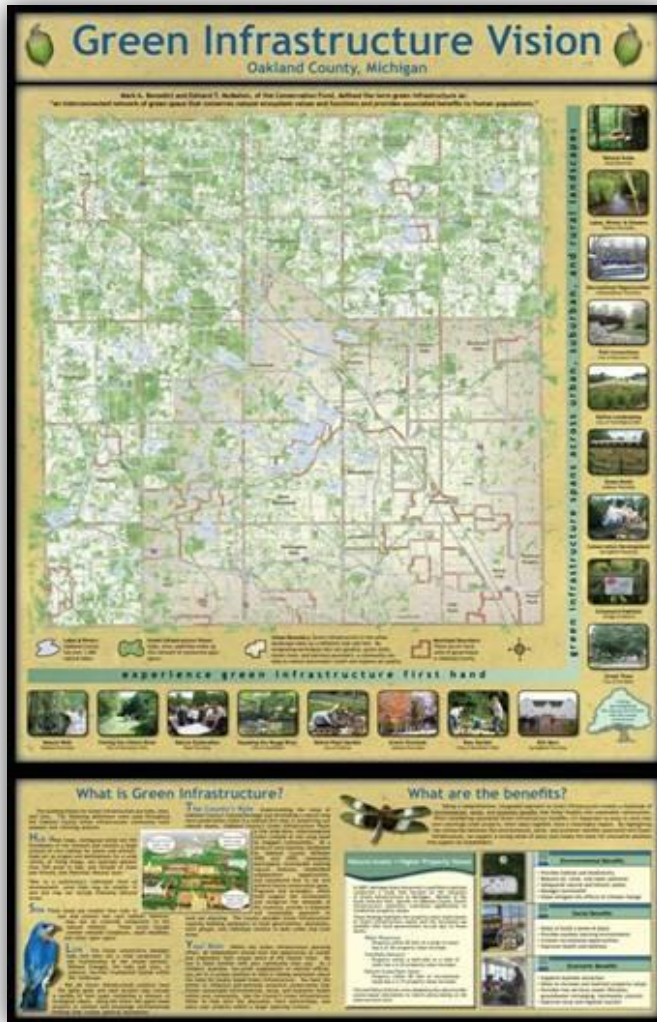
**Headwaters of five major rivers**

Nearly 96 miles of regional trails

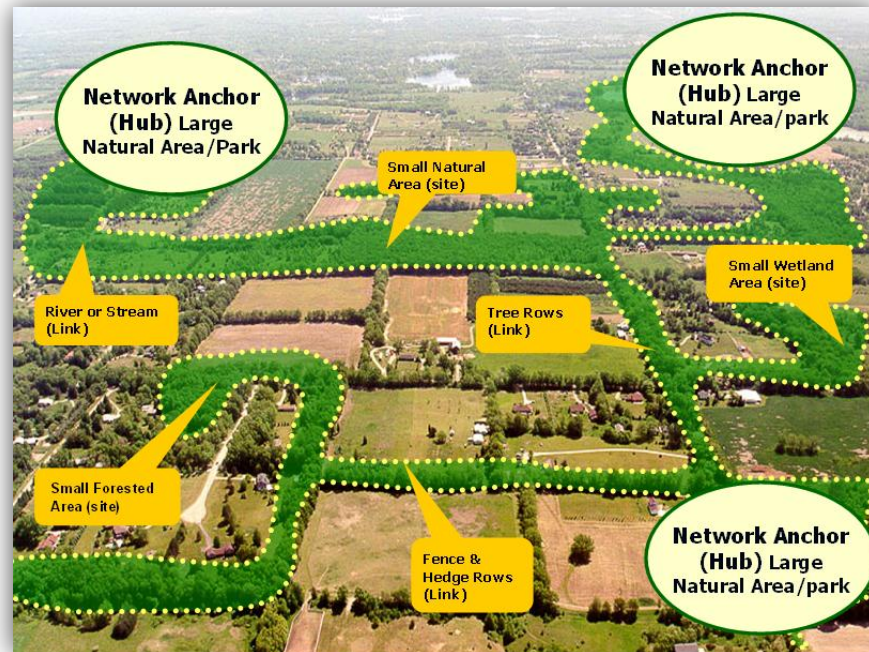
And 60,000 acres of parkland



# Background



## Oakland County's Green Infrastructure Vision Completed in 2009



# Background



## County Campus Opportunity:

- 260 acres actively managed
- 100 acres irrigated
- 5 miles of road



## County Campus Issues:

- Ponding Water - Heavy Clay Soil With Almost No Soil Absorption
- Road Runoff
- Large unused mowed areas

# Background

## Partners/advisors:

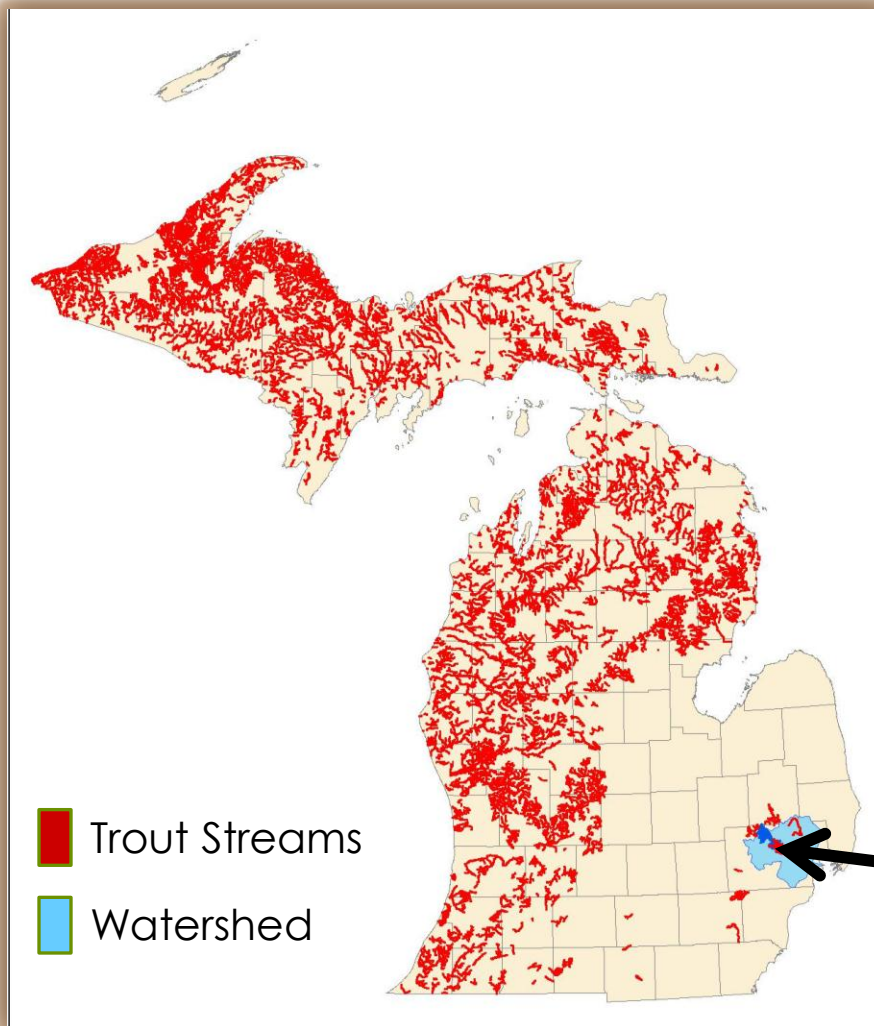
Oakland County

- Facilities Maintenance & Operations
- Planning
- Water Resources Commissioner's Office
- Road Commission
- Parks

## Main Project Goals:

- Cut down on lawn maintenance expense
- Enhance the viewshed
- Change the campus (turf grass) culture
- Reduce runoff - **send cleaner water into the system**

# Project Pictures



Project is in the Clinton River Watershed - The most populated watershed in state

But Paint Creek within the Watershed is a High quality Coldwater Trout Stream





A Design Guide for Implementers and Reviewers

## Low Impact Development Manual for Michigan



### BMP Fact Sheet

#### Native Revegetation

Native revegetation includes the restoration of forest savanna (scattered trees among prairie plants), and/or prairie. Revegetation should primarily use native vegetation due to the numerous benefits, including reduced maintenance needs.



Ernest Arboretum Wildflower Grow Zone Project, Wayne County, MI  
Source: Wayne County Department of Environment

Potential Applications		Stormwater Quantity Functions	
Residential	Yes	Volume	Low/Med/High
Commercial	Yes	Groundwater Recharge	Low/Med/High
Urban/Urban	Limited	Peak Rate	Low/Med
Industrial	Yes	Stormwater Quality Functions	
Retreat	Yes	TSS	High
Highway/Road	Limited	TP	High
Recreational	Yes	TN	Med/High
		Temperature	Med

Additional Considerations	
Cost	Low/Med
Maintenance	Low
Water Performance	Medium

#### Variations

- Prairie
- No-mow lawn area
- Woodland
- Constructed wetlands
- Buffer areas
- Replacement lawn areas

#### Key Design Features

- Maintain traditional turf lawn areas
- Develop landscape plan using native materials, determining the most appropriate
- Protect areas during construction
- Use integrated pest management (IPM) approach

#### Site Factors:

- Water table in bedrock depth: N/A
- Soils: Vegetation should match soil types
- Slope: Applicable on most slopes (up to 1:1.17)
- Potential topography: No
- Max. drainage area: Optimal is 1/2 acre (max. 20 acres) for revegetated areas

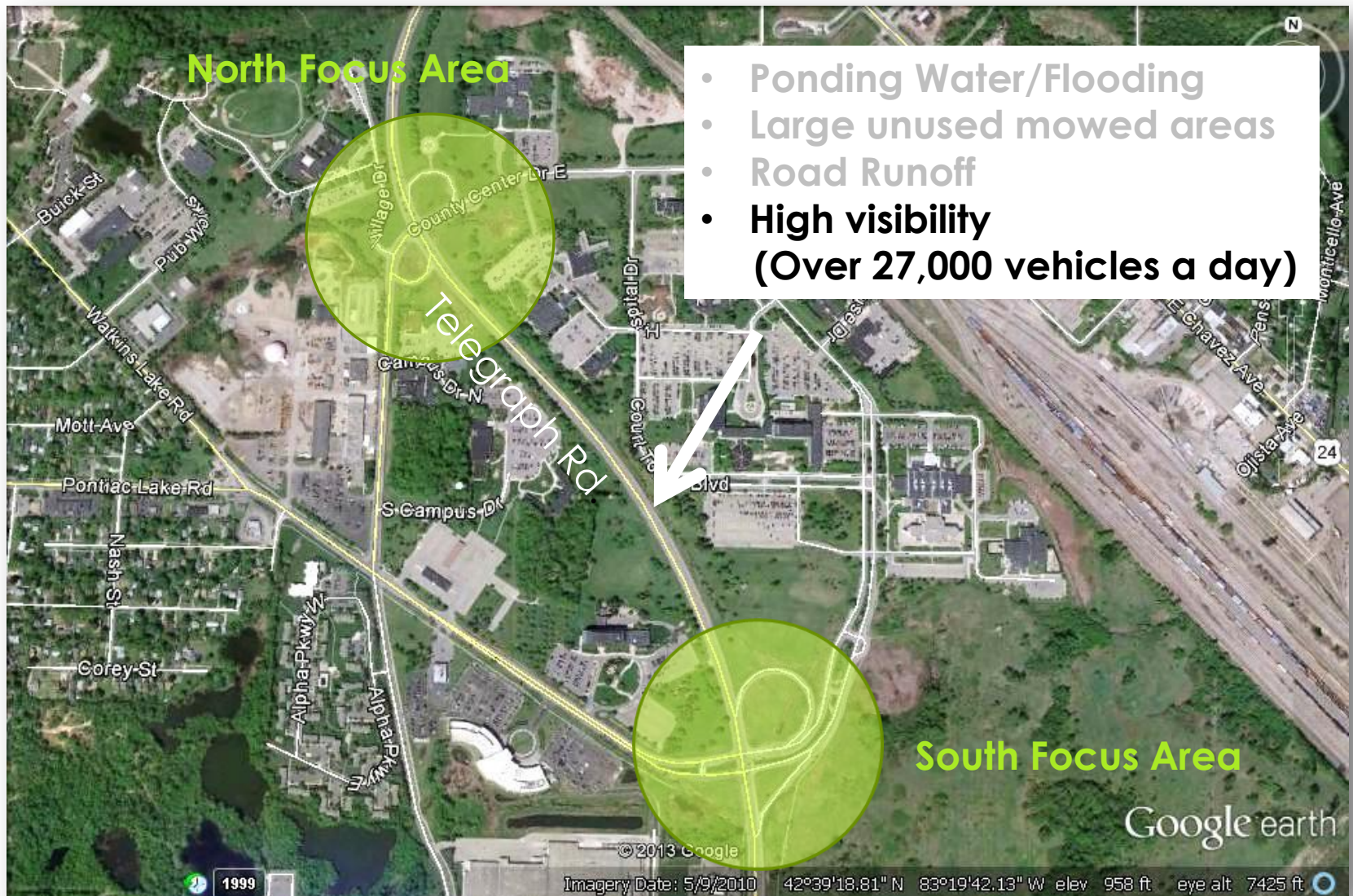
#### Benefits

- Low long-term maintenance needs
- Improves water quality
- Reduces volume

#### Limitations

- Establishment period requires more intensive maintenance, such as weeding and watering

# Project Design



# Project Design

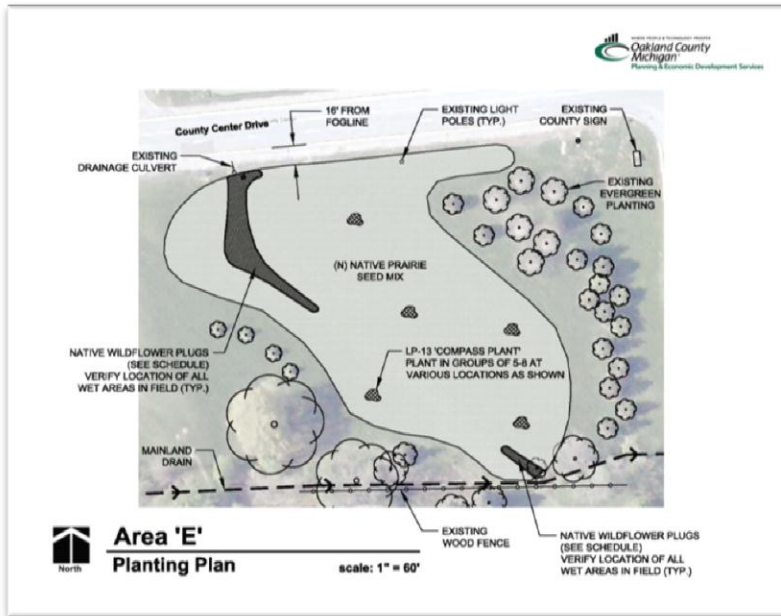


## Identified:

- 15 individual native plant grow zones areas...
- About 16 acres...
- Areas that receive a majority of the county campus roadway runoff...

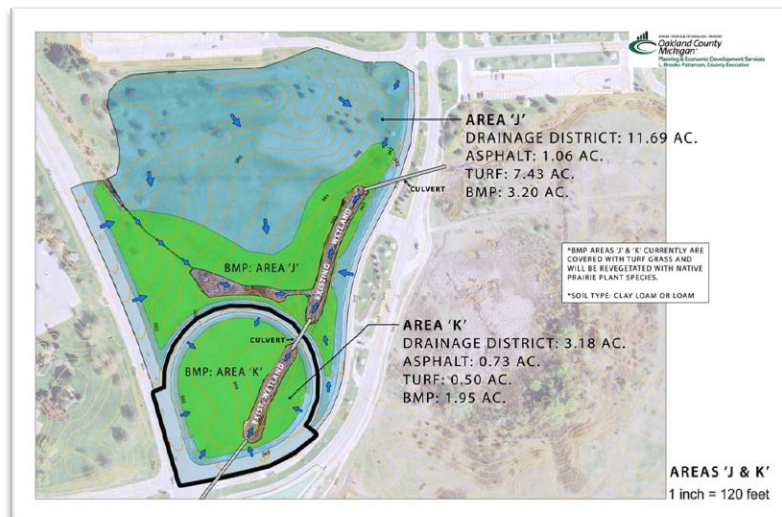


# Project Design



## Planting Plans

- Wildflower & Grass Seed
- Wildflower Plugs
- Trees
- Shrubs



## Drainage Area Calculations



## MICHIGAN NATIVE PLANT PRODUCERS ASSOCIATION

Providing nursery-grown native  
plants and seed from Michigan  
genotypes

Preserving the diversity  
and health of Michigan's natural  
heritage

Promoting and expanding public  
awareness of the effective use  
of Michigan native plants

**Growing Michigan's  
Natural Heritage**

## When choosing our vendors, we wanted to....

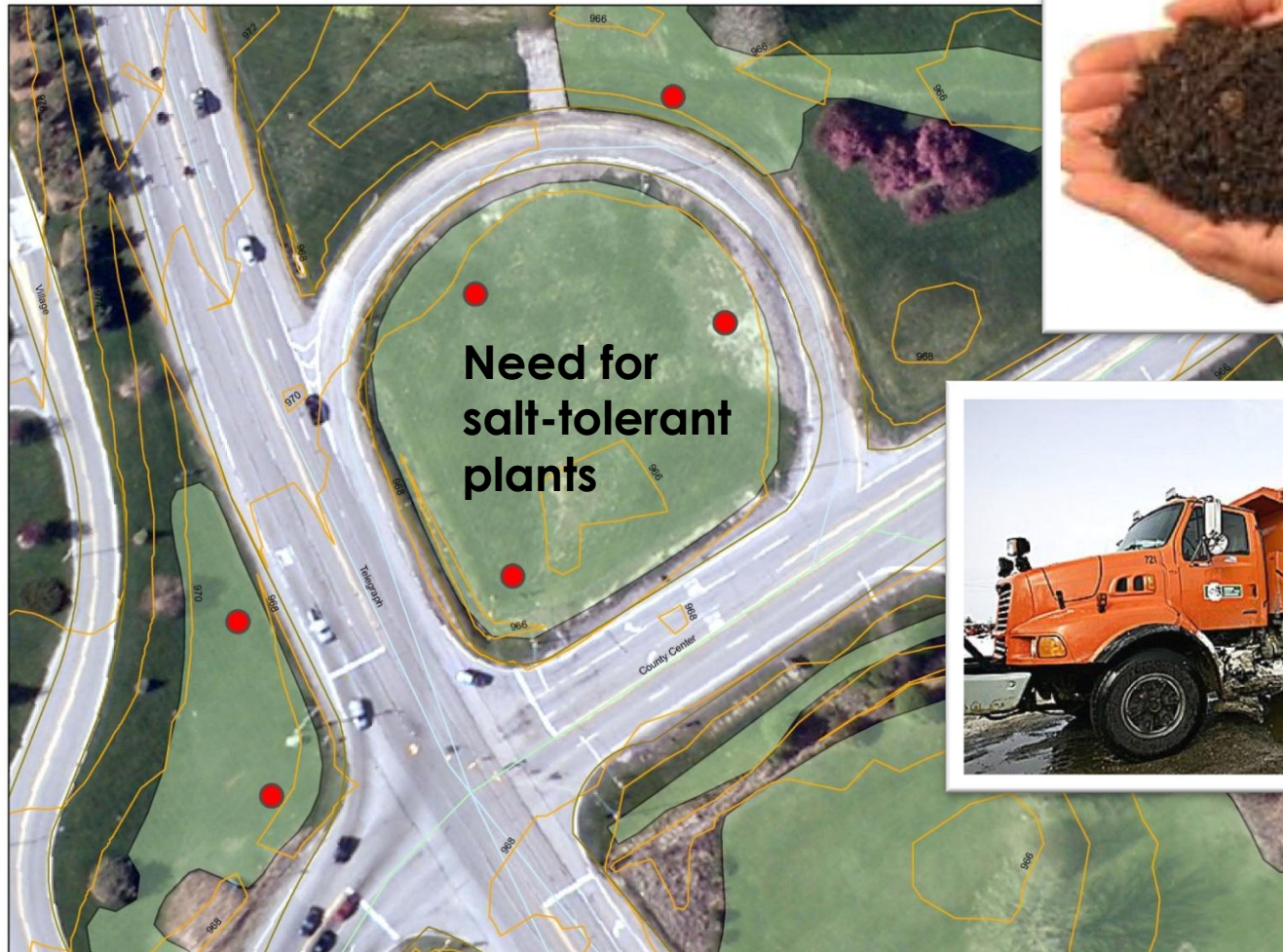
- 1 - Use plants that are truly native to the area
- 2 - Support our local businesses
- 3 - Work with and learn from experts in the field



# Think About

## Soil consideration

Poor/wet/dry



Soil Test Locations  
1 inch = 50 feet

## Availability Seed/Trees/Shrubs

Attachment "B"  
Oakland County Purchasing  
Solicitation Specifications  
Solicitation Event ID: 002512  
Native Trees and Shrubs  
Due Date 02/20/2013 by 11:45 PM

Oakland County Purchasing is requesting proposals on behalf of Facilities Maintenance & Operations Grounds Division for native trees and shrubs as specified below.

Delivery will be to:  
Public Works Building  
One Public Works Drive  
Waterford, MI 48328

### Specifications/Scope of Work

<u>Scientific Name</u>	<u>Common Name</u>	<u>Quantity Each</u>	<u>Price Each</u>
Cephalanthus occidentalis	Buttonbush	85	\$ N/A
Cornus stolonifera	Red-osier Dogwood	115	\$ 18-
Larix laricina	Tamarack	30	\$ N/A
Sambucus racemosa	Red Elderberry	50	\$ N/A
Thuja occidentalis	Northern White Cedar	10	\$ 129-
Total Cost Delivered:			\$ 3118- includes \$358 mfr.

### Delivery Time

Provide normal delivery time from receipt of order 7-10 days

### Payment Discounts

Please provide any payment discount terms available.

2.5 % 10 Days, Net 30

### Bid/Proposal Requirements

- Bidders are to place the Proposal Cover Sheet as the 1<sup>st</sup> page of the proposal.
- Bidders are to return ALL pages of the proposal forms signed, unaltered and in the correct order by the date and time specified on the proposal form. No late bids will be accepted.
- Bidders are to provide all information and/or items requested in this request for Proposal.
- Shipping terms are F.O.B. destination; Freight Prepaid and Allowed

**Not Available**  
(Buttonbush)

**Not Available**  
(Tamarack)

**Not Available**  
(Red Elderberry)

Think About

# Weather

Hot/Wet/snow



# Think About

## Maintenance

Yep...it's ongoing



Controlled burn



Mowing (spring/fall)



Weed Control

# Project Pictures

Treated Grass  
Ready for seed



**No Till Seeder**



# Project Pictures



**July color (year 2)**

# Project Pictures



**Signs & Landscape Border**

## Thank You...

If possible...let it stand  
over the winter...it's a  
Great source of shelter  
& winter food



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